

REMARKS

OVERVIEW

This amendment accompanies a request for continued examination (RCE). Claims 1, 3-4, 21-23, 25, 38-42, 45-47, 49-50, 58-66 are pending in this application. Claims 1, 4, 21, 38, 46, 47, 50, 58, 62, 63 have been amended. Claims 2, 30, 31, and 43 have been cancelled. The present response is an earnest effort to place all pending claims in proper form for allowance. Reconsideration and allowance is respectfully requested.

ISSUES UNDER 35 U.S.C. § 112

Claim 43 has been rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. Claim 43 has been cancelled thereby mooted this rejection.

ISSUES UNDER 35 U.S.C. § 102

Claims 1, 4, 38-42, 46-47, and 50 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,539,992 to Calfee et al. The Applicant thanks the Examiner for the cogent discussion in the Office Action of February 23, 2006 regarding Applicant's arguments in the response of December 19, 2005. That discussion makes clear that the Examiner has been interpreting the language of the claims in manner which is broader than what was intended by the Applicant. Therefore, to remedy this rejections, independent claims 1, 38, and 47 have been amended in a manner to be consistent with the intended scope.

In particular, in claim 1, 38, and 47, it is made clear that a "plurality" of bits of data are transformed into a "single" transmission pulse. It is submitted that this language makes clear that multiple data bits are represented by a single transmission pulse. Thus, these claims clearly

distinguish over the Calfee et al reference where a pair of pulses are used to represent a single data bit (see col. 8, lines 9-15). As claim 4 depends from claim 1, claims 39-42 and 46 depend from claim 38 and claims 50 depends from claim 47, it is respectfully submitted that these rejections should also all be withdrawn.

There is an additional reason for withdrawing this rejection to claim 1. Claim 1 has been amended to incorporate the limitations of now cancelled claim 2. As the Examiner recognizes, Calfee et al does not disclose the limitation of "wherein one set of the pulse characteristics correspond to the pulse duration and wherein length of the pulse duration corresponds to numbers 0 through 9." Therefore, it is respectfully submitted that this rejection to claim 1 should be withdrawn for this independent reason as well. As claim 4 depends from claim 1, this rejection should also be withdrawn.

Claims 1, 4, 21-23, 25, 28, 31, 38-42, 46-47, 50, and 58-64 have been rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application Publication No. 2001/0055353 to Rybicki et al. Rybicki et al. discloses a method and apparatus for encoding data into amplitude and pulse encoded signals (Abstract).

Independent claims 1, 21, 28, 38, and 47 have been amended in a manner to be consistent with the intended scope and require that multiple bits of data are represented by a single pulse. Rybicki et al does not disclose that multiple bits of data are represented by a single pulse. Rybicki does disclose that fewer pulses need to be used than bits of data represented by the pulses, however this is not the same as representing multiple bits of data with a single pulse. Note that Rybicki appears to merely use a pulse pattern which is formed from a plurality of pulses to represent a bit sequence. This is different from using a single transmission pulse to represent a plurality of bits. As claim 4 depends from claim 1, claims 22-23 depend from claim

21, claim 31 depends from claim 28, claims 39-42 and 46 depend from claim 38, and claim 50 depends from claim 47, these rejections should also be withdrawn.

There is an additional reason for withdrawing this rejection to claim 1. Claim 1 has been amended to incorporate the limitations of now cancelled claim 2. As the Examiner recognizes, Calfee et al does not disclose the limitation of "wherein one set of the pulse characteristics correspond to the pulse duration and wherein length of the pulse duration corresponds to numbers 0 through 9." Therefore, it is respectfully submitted that this rejection to claim 1 should be withdrawn for this independent reason as well. As claim 4 depends from claim 1, this rejection should also be withdrawn.

With respect to independent claim 58, claim 58 has been amended to require "a single time modulated ultrawideband radio-frequency pulse." Rybicki et al is clearly directed towards infrared communications and does not disclose time modulated ultra wideband radio-frequency pulses. Therefore this rejection to claim 58 should be withdrawn. As claims 59-61 depend from claim 58, these rejections should also be withdrawn.

With respect to independent claim 62, claim 62 has been amended to require a "single time modulated ultra wideband radio-frequency pulse." Rybicki et al is clearly directed towards infrared communications and does not disclose time modulated ultra wideband radio-frequency pulses. Therefore this claim to claim 62 should also be withdrawn. As claims 63-64 depend from claim 62, these rejections must also be withdrawn.

Claims 58-64 have been rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,700,939 to McCorkle et al. With respect to claim 58, claim 58 requires "representing a symbol comprising at least two bits of data by varying a pulse characteristic of a single time modulated ultrawideband radio-frequency pulse wherein the pulse characteristic is

selected to be of one of a set of at least three pulse characteristics based on the value of the at least two bits of data." McCorkle does not disclose this limitation. In particular, McCorkle does not disclose representing a symbol comprising multiple bits of data with a single pulse. Instead, McCorkle uses a spread-spectrum approach to UWB communications. Therefore, it is respectfully submitted that this rejection should be withdrawn.

ISSUES UNDER 35 U.S.C. § 103

Claim 2 has been rejected as being unpatentable over U.S. Patent No. 4,539,992 to Calfee et al. in view of U.S. Patent No. 5,245,345 to Kohdaka et al. Claim 2 has been cancelled thereby mooting this rejection.

Claims 3, 30, 45, 49 have been rejected as being unpatentable over U.S. Patent No. 4,539,992 to Calfee et al. in view of U.S. Patent No. 5,050,189 to Cox. Claim 30 has been cancelled thereby mooting this rejection with respect to claim 30. With respect to claims 3, 45, and 49, the deficiencies of Calfee et al have already been discussed. Cox does not remedy these deficiencies. Therefore these rejections should be withdrawn.

Claims 3, 30, 45, 49 have been rejected as being unpatentable over U.S. Patent Publication No. 2001/0055353 to Rybicki et al in view of U.S. Patent No. 6,289,303 to Atkin et al. Claim 30 has been cancelled thereby mooting this rejection with respect to claim 30. With respect to claims 3, 45, and 49, the deficiencies of Rybicki et al have already been discussed. Atkin et al does not remedy these deficiencies. Therefore these rejections should be withdrawn.

Claims 28 and 31 have been rejected as being unpatentable over U.S. Patent No. 4,921,468 to Miwa in view of U.S. Patent No. 4,703,471 to Fitelson or U.S. Patent No. 6,426,813 to Swenson et al. Claims 28 and 31 have been cancelled, thereby mooting these rejections.

Claims 65 has been rejected as being unpatentable over U.S. Patent Publication No. 2001/0055353 to Rybicki et al in view of U.S. Patent No. 6,198,783 to Campana, Jr. This rejection is respectfully traversed. Claim 65 depends from claim 62 which has been amended to further distinguish Rybicki et al. Campana, Jr. et al does not remedy the deficiencies of Rybicki et al as Campana, Jr. et al does not disclose that a single pulse is used to encode a plurality of bits representing a symbol. Therefore this rejection to claim 65 must be withdrawn.

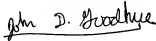
Claims 66 has been rejected as being unpatentable over U.S. Patent Publication No. 2001/0055353 to Rybicki et al in view of U.S. Patent No. 5,903,231 to Emelko. This rejection is respectfully traversed. Claim 66 depends from claim 62 which has been amended to further distinguish Rybicki et al. The deficiencies of Rybicki et al have already been discussed. Emelko does not remedy the deficiencies of Rybicki. Therefore, it is respectfully submitted that this rejection should also be withdrawn.

CONCLUSION

This is being filed with a Request for Continued Examiner (RCE) for which transmittal is attached. No other fees or extensions of time are believed to be due in connection with this amendment; however, consider this a request for any extension inadvertently omitted, and charge any additional fees to Deposit Account No. 26-0084.

Reconsideration and allowance is respectfully requested.

Respectfully submitted,



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